

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. – 23. (Cancelled).

24. (Previously Presented) A fuel bundle for a boiling water reactor, comprising:

a generally square, hollow tube having four sides which are configured as sides of the bundle,

a pair of circular-shaped water passages located adjacent to a longitudinal centerline of the tube so as to extend centrally through the tube, the pair of water passages supported by one or more rod supports,

a plurality of fuel rods arranged in a 10x10 matrix and including full-length rods and part-length rods, the part-length rods further comprising:

a first part-length rod group including two subsets in a mirror-image relationship along the centerline between the two water passages, each subset further comprising three part-length fuel rods in a triangular orientation with one rod of the subset closer to the longitudinal centerline between the two water passages than the other two rods of the subset and directly adjacent to the other two rods of the subset, and

a second part-length rod group including four pairs of part-length rods, each part-length rod pair centrally located in the outermost row or column of the 10x10 matrix adjacent a corresponding one of the four sides of the tube.

25. (Cancelled).

26. (Previously Presented) The fuel bundle of claim 24, wherein a plurality of voids are formed above upper ends of each of the part-length fuel rods to the top of the fuel bundle, and wherein the voids filled with water are configured to trap neutrons for improving a shutdown margin for the boiling water reactor.

27. (Previously Presented) The fuel bundle of claim 24, wherein there are a total of 14 part-length rods therein.

28. (Previously Presented) A fuel bundle for a boiling water reactor, comprising:

a pair of centrally located, circular-shaped water passages arranged on either side of a longitudinal centerline of the bundle within a 10X10 fuel-rod matrix bounded by four sides of a generally square, hollow tube, the fuel rods including full-length and part-length fuel rods,

wherein the 10X10 fuel-rod matrix includes two 3-rod subsets consisting of part-length rods in a mirror image relationship with one another along the longitudinal centerline between the two water passages, each 3-rod subset configured in a triangular orientation and directly adjacent to the pair of water passages such that one rod of the 3-rod subset is closer to the centerline than the other two rods and directly adjacent to the other two rods, and comprising eight additional part-length rods arranged in four pairs, each pair centrally located on an outermost row or column of the matrix nearest a corresponding one of the tube sides.

29. (Previously Presented) The fuel bundle of claim 28, wherein a plurality of voids are formed above upper ends of each of the part-length fuel rods to the top of the fuel bundle, and wherein the voids filled with water are configured to trap neutrons for improving a shutdown margin for the boiling water reactor.

30. (Cancelled).

31. (Previously Presented) A fuel bundle for a boiling water reactor, comprising:

a single, square-shaped water passage located off-center within a 10x10 fuel-rod matrix bounded by four sides of a generally square, hollow tube, the fuel rods including full-length and part-length fuel rods,

wherein the 10X10 fuel-rod matrix includes a first rod group comprising two pairs of part-length rods arranged on either side of a corner of the square water-passage, and a second rod group comprising two pairs of part-length rods and at least two non-paired part-length rods, each of the two pairs and the at least two non-paired part-length rods located in a corresponding outermost row or column of the matrix adjacent a corresponding side of the tube.

32. (Previously Presented) The fuel bundle of claim 31, wherein a plurality of voids are formed above upper ends of each of the part-length fuel rods to the top of the fuel bundle, and wherein the voids filled with water are configured to trap neutrons for improving a shutdown margin for the boiling water reactor.

33. (Previously Presented) The fuel bundle of claim 31, wherein there are a total of eleven part-length rods within the 10X10 matrix.